ELSEVIER

Journal of Non-Crystalline Solids 253 (1999) vii & viii

JOURNAL OF NON-CRYSTALLINE SOLIDS

www.elsevier.com/locate/jnoncrysol

Contents

Preface v
Contents vii

Electron spin resonance of 65-million-year-old glasses and rocks from the Cretaceous–Tertiary boundary
D.L. Griscom, V. Beltrán-López, C.I. Merzbacher and E. Bolden. 1

Mid-infrared emissions and multiphonon relaxation in Dy^{3+}-doped chalcohalide glasses
Y.B. Shin and J. Heo 23

Optical non-linearity of TiO_2-containing glasses measured by Z-scan technique
T. Hashimoto, H. Uchida, I. Takagi, H. Nasu and K. Kamiya 30

Photostimulated electron transfer between coactivator ions in alkali silicate glasses
V.I. Arbuzov 37

Laser-induced fluorescent cooling of rare-earth-doped fluoride glasses
M.T. Murtagh, G.H. Sigel Jr., J.C. Fajardo, B.C. Edwards and R.I. Epstein. 50

Photoionization of silicate glasses exposed to IR femtosecond pulses
O.M. Efimov, L.B. Glebov, S. Grantham and M. Richardson 58

A comprehensive electromotive force series of redox couples in soda–lime–silicate glass
H.D. Schreiber, N.R. Wilk Jr. and C.W. Schreiber 68

Self-diffusivity of polyvalent ions in silicate liquids
O. Claußen, S. Gerlach and C. Rüssel 76

Temperature induced structural changes and transport mechanisms in borate, borosilicate and boroaluminate liquids: high-resolution and high-temperature NMR results
S. Sen 84

Vibrational spectra, related properties, and structure of inorganic glasses
A.M. Efimov 95

Surface fictive temperature of annealed and rate-cooled soda–lime glasses
M. Tomozawa and Y.K. Lee. 119

Brittleness of glass
J. Sehgal and S. Ito 126

Factors affecting molecular dynamics simulated vitreous silica structures
N.T. Huff, E. Demiralp, T. Çagin and W.A. Goddard III 133

Three-dimensional arrays of crystallites within glass by using non-resonant femtosecond pulses
Y. Kondo, K. Miura, T. Suzuki, H. Inouye, T. Mitsuyu and K. Hirao. 143

Unified thermodynamic approach for describing the nucleating activity of substrates in the induced crystallization of undercooled glass-forming liquids
A. Dobreva-Veleva, Ts. Vassilev, J.A. de Saja, M.A. Rodriguez and I. Gutzow. 157

Thermal expansion coefficient measurements of molten glasses using the sessile drop technique
J.P. van den Brink 163

Mechanisms of nucleation and controlled crystallization of needle-like apatite in glass-ceramics of the SiO_2–Al_2O_3–K_2O–CaO–P_2O_5 system
W. Höland, V. Rheinberger and M. Frank. 170

Thermodynamic modeling in glass-forming melts
A.D. Pelton and P. Wu. 178
The structure of sodium iron silicate glass – a multi-technique approach
D. Holland, A. Mekki, I.A. Gee, C.F. McConville, J.A. Johnson, C.E. Johnson, P. Appleyard and M. Thomas 192
Redox and clustering of iron in silicate glasses
P.A. Bingham, J.M. Parker, T. Searle, J.M. Williams and K. Fyles. 203
Non-classical theory of crystal nucleation: application to oxide glasses: review
L. Gránásy and P.F. James 210
Gas solubility in glasses – principles and structural implications
J.F. Shackelford 231
Electrical transport in glassy systems: role of self-avoiding random-walks
V. Srivastava 242
An electrochemical method for the removal of a particulate gel body from a mold
E.M. Rabinovich, G.E. Blonder, R.P. Frankenthal and D.W. Johnson 246
Pd ion implantation in silica and alumina: chemical and physical interactions
G. Battaglin, R. Bertoncello, M. Casarin, E. Cattaruzza, G. Mattei, P. Mazzoldi, F. Trivillin and M. Urbani 251
Silver cluster formation in ion-exchanged waveguides: processing technique and phenomenological model
E. Borsella, G. De Marchi, F. Caccavale, F. Gonella, G. Mattei, P. Mazzoldi, G. Battaglin, A. Quaranta and A. Miotello 261

Author index 269
Subject index 271